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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/599,520
Filing Date: May 11, 2007
Appellant(s): POIRRIER ET AL.

William McCracken
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 25, 2011 appealing from the Office action mailed July 13, 2011. This is a supplemental Examiner's answer, because the Goldman reference was not included in the "Evidence relied upon" section.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The examiner has no comment on the claim list provided in appellant's appeal brief.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from

which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

6235046	GERDT	01-1999
6715150	POTIN	10-2000
5923398	GOLDMAN	07-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 6-7, 9-10, 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerdt (6235046) in view of Potin (6715150).

Regarding claims 1,2, 6 and 7, Gerdt teaches a device for implementing a phototherapy method on a set of eyes (Column 2, Lines 30-36) comprising: glasses or spectacles (170) with a plastic frame (180) and lenses (178), and at least one light source (172 or 176 or 202) mounted on or embedded in the lenses or frame (Column 8, Lines 61-67; Column 9, Lines 1-9; Figure 16). Gerdt teaches that specific wavelengths are applied to the retina, but minimal light is applied to the fovea (Column 5, Lines 56-59). Gerdt teaches that the light sources are positioned in a circular configuration around the center of the eye or at the periphery of a field of vision of the individual (Figures 4, 6 and 13). Gerdt teaches using a lens (136; Figure 12) to redirect light to the eye (Col. 8, Lines 36-41). However, Gerdt does NOT teach an off-axis diffractive optical element.

Attention is directed to Potin who teaches visors for a helmet (Abstract). Potin teaches that the visor includes an image projection source located on the forehead, which is in the periphery of the user (Col. 1, Lines 16-28), and an off-axis diffractive optical element or holographic diffraction mask affixed to a face of the visor (Col. 4, Lines 34-39; Col. 10, Lines 47-67). Potin's rationale for providing the diffractive element is in part to enable the user to look in any direction and see the projected image or a real image clearly. Potin is attempting to solve the problem introduced by the eyes of the user being offset relative to the center of the spherical internal faces of the visor, so that when light is projected from above the forehead or at the periphery of vision (Cl,

C2; Figure 5) or from a peripheral external source, it will be corrected relative to the users eyes by the diffractive element.

It would have been advantageous to modify the invention of Gerdt with the diffractive mask of Potin because doing so would have enabled the light emitted from the source to be more accurately angularly focused at the eye, and thus, targets within it. In addition, Potin's mask would reduce distortion caused by the large angles associated with the output of the emitters. Moreover, it would have been obvious to modify Gerdit in view of Potin because both inventors are projecting images and or patterns into the eye.

Regarding claims 3 and 15, Gerdt teaches angling the light into the eye so that it terminates on the retina and avoids direct contact with the fovea (Column 5, Lines 45-53). Gerdt also teaches using multiple apertures to direct light into the eye (Figures 4, 6 and 13). An image or rays of light are normally projected onto the retina by converging at a point behind the pupil (Figure 1). The greater the angle of entry of the light rays into the eye, relative to the direct line of vision (perpendicular to the center of the pupil), the closer the convergence of the light rays, relative to the pupil. In order for the light to form an image on the retina the light rays must converge before the retina, as illustrated in Figure 1.

Regarding claim 9, Gerdt teaches that the light sources can be LED's (Column 6, Lines 28-67) and that each eye has its own deflection means (lenses and light ring) arranged to cooperate with the light sources of each eye (Column 9, Lines 1-8; Figure

16). Each of the lenses (178) is any of the embodiments of light rings discussed with respect to Figures 4, 6, 13, or 14.

Regarding claims 10 and 13, Gerdt teaches using different numerical apertures for the core and cladding. These properties of the core and cladding alter the angle of exit of the light beam into the light ring. The fibers are embedded in the frame of the glasses with the light source (Column 8, Lines 66-67; Column 9, Lines 1-8). Examiner interprets the frame of the glasses to be at the periphery of the field of vision. Claim 13 recites limitations that are necessitated by the limitations set forth in claim 6 ("emitting light rays are directed into the eyes by deflection means") and claim 10 ("a condenser is arranged so as to direct light rays emitted by each of the light sources onto deflection means").

Regarding claim 14, Gerdt and Potin are silent with respect to the F number of the diffractive lenses. However, Applicant provides no rationale for using an F number of around 0.7. Therefore, the approximate F number of the diffractive lens does not appear to be critical to the practice of the invention. In addition, the optimal F number will depend on the position of the target spot to be illuminated relative to the light source. Applicant discloses that the light rays should be directed to a point slightly behind the pupil of the eye (Pages 4 and 10). Gerdt teaches angling the light onto the retina, which is behind the pupil of the eye. Therefore, Gerdt must have chosen an F number of the diffractive lens that would enable light to be directed in a similar manner.

Regarding claims 16 and 17, Gerdt teaches that some of the lit ends (176; Figure 16) or the places when the light leaves the apertures are positioned above the fovea

since they are positioned on the top of the frame (180). This means that the "specific zone" is inherently below the fovea, when the light is emitted from above the fovea. Thus, at the very least, Gerdt's device is capable of providing a specific zone below the fovea, and it would inherently do so in instances in which those sources are primarily used.

Furthermore, the method claim could be rejected under 103 as it would be obvious to provide light sources above the fovea or focus the light below the fovea in instances in which the patient is preferentially viewing objects in front of and above their line of sight. Gerdt teaches providing his device so that a patient can undergo the therapy at the same time as performing other activities (Background of the Invention).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerdt and Potin as applied to claim 6 above, and further in view of Goldman (US 5923398).

Regarding claim 8, Gerdt and Potin do NOT teach using a spectacle attachment to provide the light sources or the deflection means as claimed. However, attention is directed to Goldman who also teaches eyewear for providing retinal stimulation (Column 2, Lines 1-14). Goldman teaches using clip-on elements or spectacle attachments to be attached to the wearer's glasses (Column 2, Lines 34-39; Column 4, Lines 31-36). The remaining limitations of this claim are substantially similar to those of claim 7, rejected supra. It would have been obvious to use spectacle attachments with eyeglasses, because some patients that require the phototherapy treatment offered by Gerdt may need to use corrective lens to read or watch television. It is an object of Gerdt to provide the user with a device that will allow a user to read or watch television while undergoing

treatment (Column 5, Lines 50-55).

(10) Response to Argument

Applicant argues that Potin is non-analogous art; and that it would therefore not be obvious to modify Gerdt in view of Potin.

As an initial matter, Examiner respectfully disagrees with the characterization of Potin. Potin is concerned with refocusing incident light so that the user can see without distortion (Abstract). Potin's provides this correction by providing an optical element on a set of goggles or visors. It is true that the overall purpose of Gerdt's invention is to treat seasonal affective disorder, but he does so by providing light sources at the periphery of a set of glasses, and focusing the light from those sources into the eye. The field of endeavor is not the same; however, in both instances, light is expected and intended to enter the eye at a steep angle. Therefore, it would have been obvious for Gerdt to consult teachings concerning the focusing of light into the eye, particularly in instances where the light is incident from a periphery of the user's field of vision.

Applicant argues that it would not have been obvious to combine the teachings of Gerdt and Potin. In particular, Applicant asserts that there is no portion of Potin that teaches or suggests using the holographic mask to direct light into the eye. However, Potin teaches that "the hologram records the perturbation caused by the visor on the light rays reaching the eye of the helmet wearer:" (Col. 10, Lines 64-66). Applicant is also directed to Figure 5, which clearly illustrates providing the optical elements of Potin in order to prevent the angular offset that would otherwise be produced.

Moreover, the light sources of Gerdt are arranged around the periphery and must be coupled to elements that will redirect the light to the eye. For instance, Gerdt discloses using a lens (136; Figure 12) to "modify the transmission angle of the light" (Col. 8, Lines 36-41). Thus, the use of any optical element that enables redirection of the light would have been obvious to use in place of that lens. Potin is cited to show that using a diffractive optical element coupled to visors/glasses to redirect light was known in the art.

Finally, Applicant asserts that Gerdt and Potin teach away from the proposed combination. However, Applicant provides no arguments that support that assertion. In fact, Applicant argues that Potin should not be modified by Gerdt. However, Examiner's rejection proposes that Gerdt be modified by Potin, not the other way around. Therefore, the assertion is considered moot.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/JEFFREY B LIPITZ/ Examiner, Art Unit 3769

Conferees:

/SAM YAO/

Supervisory Patent Examiner, Art Unit 3769

/Michael Phillips/RQAS